CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

DRAFT

Anthrax and bioterrorism

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Biological Weapon

Several nations are believed to have offensive biological weapons programs. Iraq has acknowledged producing and weaponizing anthrax.

Experts believe that the manufacture of a lethal anthrax aerosol is beyond the capacity of individuals or groups without access to advanced biotechnology.

In 1979, an accidental aerosolized release of anthrax in the former Soviet Union resulted in at least 79 cases of anthrax infection and 68 deaths.

Estimates of cases and deaths following the theoretical aircraft release of anthrax over an urban population predicts millions of deaths.

The Disease

Anthrax is an acute infectious disease caused by the spore-forming bacterium Bacillus anthracis. Anthrax most commonly occurs in warm-blooded animals, but can also infect humans.

Symptoms of disease vary depending on how the disease was contracted, but symptoms usually occur within seven days.

Initial symptoms of inhalation anthrax infection may resemble a common cold. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax usually results in death in 1-2 days after onset of the acute symptoms.

The intestinal disease form of anthrax may follow the consumption of contaminated meat and is characterized by an acute inflammation of the intestinal tract. Initial signs of nausea, loss of appetite, vomiting, fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25% to 60% of cases.

The Risk

Although anthrax can be found globally, it is more often a risk in countries with less standardized and effective public health programs. Areas currently listed as high risk are South and Central America, Southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East.

Direct person-to-person spread of anthrax most likely does not occur.

Early diagnosis of inhalation anthrax would be difficult and would require a high index of suspicion. The first evidence of a clandestine release of anthrax as a biological weapon most likely will be patients seeking medical treatment for symptoms of inhalation anthrax.

There is no need to immunize or treat patient contacts (e.g., household contacts, friends, coworkers) of a patient, unless they were also exposed to the aerosol at the time of the attack.

Serious consideration should be given to cremation of persons who die the prevent further transmission of disease.

Treatment

Anthrax is diagnosed by isolating B. anthracis from the blood, skin lesions, or respiratory secretions or by measuring specific antibodies in the blood of suspected cases.

Given the rapid course of symptomatic inhalation anthrax, early antibiotic use is essential–a delay, even in hours, may lessen chances for survival. For those treated with antibiotics and survive, the risk of recurrence remains for at least 60 days.

Doctors can prescribe effective antibiotics. Usually penicillin is preferred, but erythromycin, tetracycline, or chloramphenicol can also be used. To be effective, treatment should be initiated early. If left untreated, the disease can be fatal.

The anthrax vaccine for humans licensed for use in the United States is a cell-free filtrate vaccine, which means it uses dead bacteria as opposed to live bacteria. The vaccine is reported to be 93% effective in protecting against cutaneous anthrax. The anthrax vaccine was developed and is manufactured and distributed by the Michigan Biologic Products Institute, Lansing, Michigan. (Anthrax vaccines intended for use in animals should not be used in humans.)

The vaccine should only be administered to healthy men and women from 18 to 65 years of age. Because anthrax is considered to be a potential agent for use in biological warfare, the Department of Defense began systematic vaccination of all U.S. military personnel.